<110> Wyeth
       Leeying Wu, Wei Liu

<120> COMPOSITIONS, ORGANISMS AND METHODOLOGIES EMPLOYING A NOVEL HUMAN
       KINASE

<130> AM101074

<150> 60/417,155
<151> 2002-10-10

<160> 30

<170> PatentIn version 3.2

<210> 1
<211> 2493
<212> DNA
<213> Homo sapiens

<400> 1
atgcttgggc cagggtccaa tcgcaggcgc cccacgcagg gggagcgagg cccagggtcc   60

cccggagagc ccatggagaa gtaccaggtt ttgtaccagc tgaatcctgg ggccttgggg   120

gtgaacctgg tggtggagga aatggaaacc aaagtcaagc atgtgataaa gcaggtggaa   180

tgcatggatg accattacgc cagtcaggcc ctggaggagc tgatgccact gctgaagctg   240

cggcacgccc acatctctgt gtaccaggag ctgttcatca cgtggaatgg ggagatctct   300

tctctgtacc tctgcctggt gatggagttc aatgagctca gcttccagga ggtcattgag   360

gataagagga aggcaaagaa aatcattgac tctgagtgga tgcagaatgt gctgggccag   420

gtgctggacg cgctggaata cctgcaccat ttggacatca tccacaggaa tctcaaaccc   480

tccaacatca tcctcatcag cagtgaccac tgcaaactgc aggacctgag ttccaatgtg   540

ctaatgacag acaaagccaa atggaatatt cgtgcggagg aagaccctt tcgtaagtcc   600

tggatggcc ctgaagccct caacttctcc ttcagccaga aatcagacat ctggtccctg   660

ggctgcatca ttctggacat gaccagctgc tccttcatgg atggcacaga agccatgcat   720

ctgcggaagt ccctccgcca gagcccaggc agcctgaagg ccgtcctgaa gacaatggag   780

gagaagcaga tcccggatgt ggaaaccttc aggaatcttc tgcccttgat gctccagatc   840

gacccctcgg atcgaataac gataaaggac gtggtgcaca tcaccttctt gagaggctcc   900

ttcaagtcct cgtgcgtctc tctgaccctg caccggcaga tggtgcctgc gtccatcacc   960

gacatgctgt tagaaggcaa cgtggccagc attttaggtg atgctgggga cacaaagggg   1020

gagcgtgccc tgaagctcct gtccatggcc ttggcatcct attgtttagt tccagagggt   1080

tcattattta tgtcccctggc cttgctccac atgcacgacc agtggctcag ctgtgaccag   1140

gacagagtcc ctgggaagag agactttgcc tccctgggga aactagggaa gctgttgggc   1200

cccatcccaa agggtctgcc gtggcccccg gagctggtgg aggtggtggt cacgaccatg   1260

gagctacatg acagggtcct cgatgtccag ctgtgtgcct gctccctgct gctgcacctc   1320

```
ctgggccaag gcctgccttt tgcctgtcc gtggccctgg acaagttcct gatgatcctg    1380

ccagttttcc cagctatgaa gcgaggagct ggacacgagg tcctctggag tcaccctcag    1440

ggaggatggg ttgtgtcctc tgaagagggc tgcgctggtg caccacccgg aagccaaggc    1500

tccctgcaac caagccatca cctccaccct gctgagtgct cttcagagcc accccgagga    1560

ggagccactt cttgtcatgg tctacagcct gctagccatc accacaaccc aggggcccag    1620

tgggcttccg aagccgccag ccaggactgt gggaaggaga gggccataca gagcgctcac    1680

accttcaccc acaaatcgga gtcagagtca ctgtcagagg agctgcagaa cgctgggctg    1740

ctggagcaca tcctggagca cctcaacagc tccctcaaaa gcagggacgt ctgcgccagc    1800

ggcctgggcc tgctctgggc cctcctgctg gacgacccca tcttggcact ccagcgcccc    1860

aggaaaaaga gagctccaaa ccacggaaag cccgggaaac ccaagaaccc tgccagcacc    1920

caaagtatca ttgtgaacaa ggccccccttg gagaaggtcc cggacctcat cagccaggtg    1980

ttggccacct accctgcgga tggggaaatg gcagaagcca gctgcggagt cttctggctg    2040

ctgtccctgc tgggctgcat caaggagcag cagtttgaac aagtggtggc gctgctcctg    2100

caaagcatcc ggctgtgcca ggacagagcc ctgctggtga acaatgccta ccggggactg    2160

gccagcctgg tgaaggtgtc agagctggcg gccttcaagg tggtggtgca ggaggagggc    2220

ggcagtggcc tcagcctcat caaggagacc taccagctcc acagggacga cccggaggtg    2280

gtggagaacg tgggcatgct gctggtccac ctggcttcct atgaggagat cctgccggag    2340

ctggtgtcca gtagtatgaa ggccctgctc caggagatca aggagcgctt cacctccagc    2400

ctggtgagtg acagcagcgc cttcagcaaa ccaggcctcc ctccaggtgg aagcccccag    2460
                                                                     2493
ctggggtgca ccacgtctcgg gggactggaa tag
```

<400> 2

```
Met Leu Gly Pro Gly Ser Asn Arg Arg Arg Pro Thr Gln Gly Glu Arg
1               5                   10                  15

Gly Pro Gly Ser Pro Gly Glu Pro Met Glu Lys Tyr Gln Val Leu Tyr
            20                  25                  30

Gln Leu Asn Pro Gly Ala Leu Gly Val Asn Leu Val Val Glu Glu Met
        35                  40                  45

Glu Thr Lys Val Lys His Val Ile Lys Gln Val Glu Cys Met Asp Asp
    50                  55                  60

His Tyr Ala Ser Gln Ala Leu Glu Glu Leu Met Pro Leu Leu Lys Leu
65                  70                  75                  80
```

Arg His Ala His Ile Ser Val Tyr Gln Glu Leu Phe Ile Thr Trp Asn
                85   90   95

Gly Glu Ile Ser Ser Leu Tyr Leu Cys Leu Val Met Glu Phe Asn Glu
            100   105   110

Leu Ser Phe Gln Glu Val Ile Glu Asp Lys Arg Lys Ala Lys Lys Ile
        115   120   125

Ile Asp Ser Glu Trp Met Gln Asn Val Leu Gly Gln Val Leu Asp Ala
    130   135   140

Leu Glu Tyr Leu His His Leu Asp Ile Ile His Arg Asn Leu Lys Pro
145   150   155   160

Ser Asn Ile Ile Leu Ile Ser Ser Asp His Cys Lys Leu Gln Asp Leu
                165   170   175

Ser Ser Asn Val Leu Met Thr Asp Lys Ala Lys Trp Asn Ile Arg Ala
            180   185   190

Glu Glu Asp Pro Phe Arg Lys Ser Trp Met Ala Pro Glu Ala Leu Asn
            195   200   205

Phe Ser Phe Ser Gln Lys Ser Asp Ile Trp Ser Leu Gly Cys Ile Ile
        210   215   220

Leu Asp Met Thr Ser Cys Ser Phe Met Asp Gly Thr Glu Ala Met His
225   230   235   240

Leu Arg Lys Ser Leu Arg Gln Ser Pro Gly Ser Leu Lys Ala Val Leu
                245   250   255

Lys Thr Met Glu Glu Lys Gln Ile Pro Asp Val Glu Thr Phe Arg Asn
            260   265   270

Leu Leu Pro Leu Met Leu Gln Ile Asp Pro Ser Asp Arg Ile Thr Ile
        275   280   285

Lys Asp Val Val His Ile Thr Phe Leu Arg Gly Ser Phe Lys Ser Ser
    290   295   300

Cys Val Ser Leu Thr Leu His Arg Gln Met Val Pro Ala Ser Ile Thr
305   310   315   320

Asp Met Leu Leu Glu Gly Asn Val Ala Ser Ile Leu Gly Asp Ala Gly
                325   330   335

Asp Thr Lys Gly Glu Arg Ala Leu Lys Leu Leu Ser Met Ala Leu Ala
            340   345   350

Ser Tyr Cys Leu Val Pro Glu Gly Ser Leu Phe Met Pro Leu Ala Leu
          355   360   365

Leu His Met His Asp Gln Trp Leu Ser Cys Asp Gln Asp Arg Val Pro
      370   375   380

Gly Lys Arg Asp Phe Ala Ser Leu Gly Lys Leu Gly Lys Leu Leu Gly
                  390   395   400
385

Pro Ile Pro Lys Gly Leu Pro Trp Pro Pro Glu Leu Val Glu Val Val
              405   410   415

Val Thr Thr Met Glu Leu His Asp Arg Val Leu Asp Val Gln Leu Cys
          420   425   430

Ala Cys Ser Leu Leu Leu His Leu Leu Gly Gln Gly Leu Pro Phe Ala
          435   440   445

Cys Ser Val Ala Leu Asp Lys Phe Leu Met Ile Leu Pro Val Phe Pro
      450   455   460

Ala Met Lys Arg Gly Ala Gly His Glu Val Leu Trp Ser His Pro Gln
465   470   475   480

Gly Gly Trp Val Val Ser Ser Glu Glu Gly Cys Ala Gly Ala Pro Pro
              485   490   495

Gly Ser Gln Gly Ser Leu Gln Pro Ser His His Leu His Pro Ala Glu
          500   505   510

Cys Ser Ser Glu Pro Pro Arg Gly Gly Ala Thr Ser Cys His Gly Leu
      515   520   525

Gln Pro Ala Ser His His His Asn Pro Gly Ala Gln Trp Ala Ser Glu
      530   535   540

Ala Ala Ser Gln Asp Cys Gly Lys Glu Arg Ala Ile Gln Ser Ala His
545   550   555   560

Thr Phe Thr His Lys Ser Glu Ser Glu Ser Leu Ser Glu Glu Leu Gln
              565   570   575

Asn Ala Gly Leu Leu Glu His Ile Leu Glu His Leu Asn Ser Ser Leu
          580   585   590

Lys Ser Arg Asp Val Cys Ala Ser Gly Leu Gly Leu Leu Trp Ala Leu
      595   600   605

Leu Leu Asp Asp Pro Ile Leu Ala Leu Gln Arg Pro Arg Lys Lys Arg
                              Page 4

610   615   620

Ala Pro Asn His Gly Lys Pro Gly Lys Pro Lys Asn Pro Ala Ser Thr
625   630   635   640

Gln Ser Ile Ile Val Asn Lys Ala Pro Glu Lys Val Pro Asp Leu
                  645   650   655

Ile Ser Gln Val Leu Ala Thr Tyr Pro Ala Asp Gly Glu Met Ala Glu
                  660   665   670

Ala Ser Cys Gly Val Phe Trp Leu Ser Leu Leu Gly Cys Ile Lys
                  675   680   685

Glu Gln Gln Phe Glu Gln Val Val Ala Leu Leu Leu Gln Ser Ile Arg
                  690   695   700

Leu Cys Gln Asp Arg Ala Leu Leu Val Asn Asn Ala Tyr Arg Gly Leu
705   710   715   720

Ala Ser Leu Val Lys Val Ser Glu Leu Ala Ala Phe Lys Val Val Val
                  725   730   735

Gln Glu Glu Gly Gly Ser Gly Leu Ser Leu Ile Lys Glu Thr Tyr Gln
                  740   745   750

Leu His Arg Asp Asp Pro Glu Val Val Glu Asn Val Gly Met Leu Leu
                  755   760   765

Val His Leu Ala Ser Tyr Glu Glu Ile Leu Pro Glu Leu Val Ser Ser
        770   775   780

Ser Met Lys Ala Leu Leu Gln Glu Ile Lys Glu Arg Phe Thr Ser Ser
785   790   795   800

Leu Val Ser Asp Ser Ser Ala Phe Ser Lys Pro Gly Leu Pro Pro Gly
                  805   810   815

Gly Ser Pro Gln Leu Gly Cys Thr Thr Ser Gly Gly Leu Glu
                  820   825   830

<210> 3
<211> 29836
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (6464)..(8402)
<223> Can be any one of A, T, C and G

<400> 3   Page 5

```
atgcttgggc cagggtccaa tcgcaggcgc cccacgcagg gggagcgagg cccagggtcc    60
cccggagagc ccatggagaa gtaccaggtg ccgagtgttc cctgcgggga ggcgggagct   120
ccgtgggggta acggtcgcaa ccctggagct acggccggcg gttccgaccg agggcggcga   180
ggggcccgcg ccctggccag tgtcggcctg cagctcctag gttgaacccg ggggccctcc   240
aacggtgacc tcctgggtgc cctttgccac tcagtttccc cctttgtgaa ttgactaagg   300
attctccagc cctggctgag tatttgaggg cgtggggcag ctcctctatc cttcgtgcct   360
ggggtctgtg cgcttgggtc caccgaggca ggacccccgg gaacatcccg agtacataat   420
tgggagcccc cagtcccta aaaacacccc tgcagcgtgg gtctgtgaaa atgtttgaga   480
cctaaaaaat tcacaaaaca caaaaggaaa gctgcaaaat aaaagtaaat gtttaattaa   540
atgcttctat acatgatata tacactttat taaatgttag attcagcatt tgtgaaaaat   600
gcattcgctt ggaaacagtt tgcgggttag attttttgtca ctttggaaga attgtctttg   660
tgtgagagga ctataggcg ttgccagagg tgaagcagat gagcttctgg tggccagata   720
atttttaaag taaagttgtt tttcagatta aaaaaaaaata gacgtttcag gaatatacct   780
gcttttggaa aaaaaaaatag acttgattcg agatacggct ccatttact gtttaatttg   840
ctgcctaagc ttgaacgctc tcacaccagc tctgccctca gcccgctgtg gcttagaaca   900
gcagtccctg gccgggctcg gtggctcacg cctgtaatcc ccaacacttt gggaggccaa   960
ggcgggcgga tcacctgaga tcgggagttc aagaccagcc tgaccaacat ggagaaactg  1020
tctctactaa aaatacaaaa ttagccaggt gtggtggcgc atgcctgtaa tcacagctac  1080
tcgggaggct gaggctggag aatcgcttga acccaggagg cagaggttgt ggtgagccaa  1140
gatagcgcca ttggactcca gcctgggcaa caagagcaaa actctgtctc agaaagaaaa  1200
aaaaaaatag cagtccccaa ccttttggc acaagggacc agttttgtgg aagacaattt  1260
ttccacagat ggaggcggga ggatggtttt gggatgattc aagcacatta cacttagtgt  1320
gcagttcatt tctattatta tgttgtaata cataatgaaa taattacaca actccaccata  1380
atgtagaatc agtgggagcc ctgagcttgt tttcttgcaa ctagaccatc ctctcgggat  1440
gatgggagac agtgacggat catcaggcat ttgtttctca taaggagcat gcaacctgga  1500
tccctcacat gcactgttca caatagggtt cacactccca tgagaatcta atgctgctgc  1560
tgagctgaca ggaggtggag cttgggtggt aatgcgagcc atggggagcg gctgtaaata  1620
cagatgaagc tttgctccac tgcctgctgc tcacctcctg ctgtgcagcc tggttcctaa  1680
caggccacgg actaggttgg ggacccctgg cttagaatat ccagtgtcat gagcaggctg  1740
ctcacaaggc tggattacag actcctaaga cttttatggg ctccgagagt ccctaggctc  1800
aggcttccat cctcatatct cctcctctgg gtcctgccct ccctccccca atcctctgat  1860
gaatgtcagc ctccagcaat ccccggccca gccccctgcc ccatagcact tggtctctgc  1920
acagagttct ggcttggtgg ccatctctcc agatttggct caaatcacag gctctaagat  1980
cagacccca gagttacccc aggcagtgtc ctgctttcta gtgacatagc ctcaggcaag  2040
```

```
gacctagctc cttgtgcctc agttttcccc aatgtaaaca cagaggtagc aatggtgtca   2100

actgcaaagg gtggctgtga agtgcttggc accatgccag gcacacaatg gcttcctgat   2160

tgtaccagtc acaagattgg ttactttctt gttggaaacc agttgggagg tggatgctgg   2220

aagttgaggt cacagaggtc tatagagagt gaataagccc tttttctctg ggaggttctt   2280

gcacttgagt gcccagctgg tcctcattgc aggttggggg agggatacag ggttgtagaa   2340

gagctccaga atcggcccca aataggtgag atcagagttc tgccattgaa aggcttcttg   2400

ccctccttgg gccatttcct ctattgcaag atggggtgga gccacttgct ctgccagcct   2460

gacaggggag ttagcagggc cagaaaagga gttggagctg ggcttttgga aagggaaaag   2520

ttgtgtgcat ttcctgaaag cttctctctt ccttgctgat aggttttgta ccagctgaat   2580

cctggggcct tggggtgaa cctggtggtg gaggaaatgg aaaccaaagt caagcatgtg   2640

ataaagcagg taagaggcca agcctgtgca tcccatgccg ggtggttctg tgactgtgat   2700

tttccccaat acaagctctt cccatgttgg agaagcttcc tgatgcggca gctggattcc   2760

tcgctgctga cacttgcgga gactaatctg gttggggtag atgtgggggt gcgtgaagct   2820

ctgtcacctt gatggggaag caatgctaat ttttactcca acaccaccac ctcccaccat   2880

ttacgcatca cgtgctgtat gccaggcact gactcacttc atctcccgtc aaccctgtaa   2940

agcagaaaca atgaccctgt ttatagccaa agacagtgag gctcaatgca gcgccagact   3000

aggcaaggtc acacaatttc caagaggatt tgaattcagg ccacctcact gggggacacc   3060

gtgctacccca gtgctgggtc accagtttta ccaaaaggga gccaggccca gagaggatgg   3120

ggactggctc aaggtcacac agggctaagg tcacacacca ggccctgagc ccttccacca   3180

cactcctcac cagggctagc agggcatggg gaggtgtagg cctgcaggaa gacagcccttt  3240

tgtgtgtccg agacagggag gtccagatca acagagggac tagggtgaga aagctgctgc   3300

aagagtccct ggcatgccct cctctctgtg gtggtggcag ggacccagca ggttcagggc   3360

tggccataca gcgggaggag ccttgtcagc agctgctact gggccaggcc tcagtccgta   3420

cagctccgca gtctcaccct gtatggctgg gcctggagtc cttgcccctg ccctgctccc   3480

ttgctggctg gctgtggggt tggcccccctt gtctcacaag ccactgggc agtgtggctg   3540

actgccctct gagcagttaa ggagcttttt tttttgtttg gagatggagt cttgctctgt   3600

cgccaaggct agagtgcagt ggtgtgatct cagctcactg caacctctgc ctcctgggtt   3660

caagcaattt tcctgcctca gcctcccaag tagctgggac tacaggcaca cgctgccacg   3720

cccggctaat ttttgtatt ttagtagaga cagggtttca ccgtgttgcc caggctggtc   3780

tcgaactcct ggaactcctg agctcaggca gtccgcccgc ctcggcctcc caaagtgctg   3840

ggattacagg catgagccac cgcgtccggc ctgaggagct tttaaaaatg tcagccatga   3900

ctaggcatgg tggctcatcc ctgtaatcgc agcattttgg gaggcgagg caggcagatc    3960

ccttgaggtc agaagtttga gagcagcctg gccaacatgg tgaaacccca tctctactaa   4020
```

```
aaatacaaaa attagctgag catggtggtg ggtgcctata gtcccagcta cttgggagct    4080
gacgcgggag aattgcttga acccgggcgg cggaggttgc agtgagtcga gattgcgcca    4140
ctgcactcca gcctgggtga cacagcgaga ctctgtctaa attaattaat taattaatta    4200
aattaaaaat aaaaatatca cccaattatt tctaaataaa aattggggaa agagagtgta    4260
ggtaggagtt tatgggttct tccagtcttt tttcctaagc gtttgtaaac ttttttggat    4320
tcaggagaat ggtatcgtta aagttgatag catccttttt atattgcaaa catagtttca    4380
tgtcattccc acagcctcct cctctcttgg ctctggcaac tgtgtggcct cccgtcttgc    4440
ttgatgtgct gtaactaacc caagccatcc ctatcacatg ggctgagcat tgagcttgtt    4500
ctcaatttt cactttgtgt aaacagctct gataaagatg cttatggcat tatggttttg    4560
tttgtttttt tgtttgtttt tgtttgtttt tgtttagcat ccatgatttc cttaggaaaa    4620
attcctagga gtgagatttc tgggtcatac gatgtaactt tttttttttt tttttttttt    4680
ttgagatgga gttttgctct tgttgcccag gctggagtac agtggtgtga tctcagctca    4740
ctgtaacctc tgcctcccgg attcaagcga ttttcctgcc tcagccttcc tgagtggctg    4800
ggattacagg cacgtgccac cacatccagc taattttgta ttttagtag acggggtttc    4860
tccatcaaca tggagaggat ggtcaggctg gtctcgaact cccgacctca gatgatccgc    4920
ctgcctcggc ctccaaagt gctgggatta caggcgtgag ccaccccacc cagccgcttt    4980
tttttttt ttttgagacg gagtctcact cttgttgccc aggctggagt acaatggcgt    5040
gatctcggca cactgcaacc cccttctccc aggttcaagt gattctcctg cctcagcctc    5100
cgaagtagct gggattacag gcatgtgcca ccacgcccgg ctaattttgt attttagta    5160
gagacagggt ttctccatat tggtcaggct ggtctcgaac tcccaacctc aggtgatccg    5220
cctgcctcgg cctccctaag tgctgggatt tcaggcgtga gccactgtgc ccggccacaa    5280
tgtaacattt tcaagtcttt ccatgttttg gccaacttca cctcctcata tgcccctag    5340
gacaggagga aaggaagaca ggaaggctca ctcagtgtct ttgccctgga ttccacggga    5400
cagtgccact ggcatctcag gtctctccat agatctggga acaattcact aacttacat    5460
gatggtctgc attcacccca ttataagagt acttcattca taagtctttt gagcaaaatt    5520
ctgggtgagg atctggtatt agagccagtg gtagtatata cctagggcct gtgccaccaa    5580
gcgtgctgca gactcaaagc tccgtgctgc ccttgccacc acccttccct ttccatgccc    5640
tccccacctc cacccggaga gggcacagga gagaagagca ctgtacattc catgcgtgga    5700
gacaaccttc cccatgtggg taaggaatga agtggtgaga ttgatgcttt cccaaccaga    5760
acaagatgtt cctgtttaaa gacggtctga aaatggatcc tttactgagt tcttggagcg    5820
tatattatgc tgtcctaaac ttatcttttgc aaaaggagca aagatgttct cattgctcta    5880
agtattttta gatctctgcc ttaggaatat cttccatttg tgccatatg tgggggcagg    5940
aatggtggga gcctgtcact cctgctaaat agtgatgatg gtggtgatga tggaggtggc    6000
aatgatggtg gtagtggtgg tgatggtggt ggcagtgatg atggtgatga tgatggtgat    6060
```

```
gataatggtg atggtggtga tggtgtgatg atggtgatgg tggtcatggt gatggtgtga   6120

tgatggtgat ggtggtcatg gtgattatgg tcgtggtgat gatgtgatga tggtggtggt   6180

ggtgtgatgg tgatgatagt aatggtgatg gtggtgatgg tgatgataat agtggggatg   6240

gtgacagtgg tgttgatggt gtgatggtgg taatgatgat ggtaatgatg gtgatggtgg   6300

tgatgatggt aatgatggtg atgatagtga cgatggtgac agtggcattg atggtttgat   6360

ggtggtgatg gtgtgatgat ggtggtggtg tgatggtgat ggtggtagtg atggtgatga   6420

tgttggtgat ggtggtgatg atggggataa tagtggtggt ggtnnnnnnn nnnnnnnnnn   6480

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6540

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6600

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6660

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6720

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6780

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6840

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6900

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   6960

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7020

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7080

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7140

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7200

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7260

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7320

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7380

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7440

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7500

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7560

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7620

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7680

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7740

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7800

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7860

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7920

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   7980

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn   8040
```

```
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8100

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8160

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8220

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8280

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8340

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    8400

nntcaatgat ggtaatgatg gtgatgatat atgatgatga tggtaatgat ggtgatgata    8460

gtggtgatgg tggtggtgat ggagtgatgg tggtaatggt agtggtggtg gtgtgatgat    8520

ggtgatgatg gcagtgatgg tgatgatggt gatggtgatg atggtgacag tgatggtggt    8580

gttggttgtg gttgtggtaa tgatggtgat ggttgtggtg gaggtggtgg ctgtgcagat    8640

gatggtaatg gtcgttgtgg tggtggtgat ggcggtgata acggagatga tttgctacat    8700

gtttattaag ctcatgctct tgtgcccttg caggtggaat gcatggatga ccattacgcc    8760

agtcaggccc tggaggaggt aactctcagg gtagttttcc ctctggaaga gctcaatgga    8820

gcatacacag actgtgttct gtaccttctt gttgagtgcc tggatgaaga gaaggctgga    8880

gggagggata gagcatcagc accagttttg cctcagctgt gaagccagca gccccaggtc    8940

atgaagggag tccatgcccc aaacactcac tgctaaatgc aggtgccgac aacttagaac    9000

atatgttccc agagaacata aaatttaaat attgggctgg gcacggtggc tcacatttgt    9060

aatcccacca ctttgggagg ccgaggcggg tggatcactt gaggtcagga gttcaagacc    9120

agcctagcca acatgtgggaa accctgtctc aaccaaaaat acaaaaaaat tagctgggca    9180

tggtggtggg cacctgtaat cccagctact tcgagaggtt gaggcgggag aatcacttga    9240

acctgggagg cggagattgc aatgagccga gattgcacca ttgcattcca ccctgggtga    9300

cagagcaaaa ctttgtctca aaaataaata aatattggcc gggtccctag gttaatctac    9360

caataacttc tttaaatatt ttttcttcaa tataaaatta ttaattacag cagaaaattt    9420

taaaaataca gaattgggtt ttcttttgtt tttacctttt tttttttttc tttaatagca    9480

atggggtctc accattttgc ccaggctagt ctgaatttct gggctcaagc aatcgtccca    9540

cctcggcctc caaagtgctg gggtacaggc atgtaccacc acacccatac cagaactgtt    9600

taacaaaaca aatataaatt acccttaatt ctaccattga gagctgccca gcagtaacat    9660

actcgtttac aataaatagcg ataacagctg cacttcggtt tgattggcaa agcctccgag    9720

tagcctttct ttgtgtttct tgaatttccc acgagcttga aggtgtcccc tcttatctca    9780

tggtcacttg tttgtcttct ggaattgctg gctctggagc ttggccagca aacattattg    9840

ggtgtatagt gtgaccgaag cacagtggtg ggcccaggct actcggtaac aaatgggaag    9900

aaagagcatg gggcctgccc agagccgcac gccgccgtgg cttttcacgt tgccgattcc     9960

catccacagc ccactaggta ggcacctgc tttcatgccc aaccttccac cccaagcagt    10020

tgtctgtctg gctccatgtc tctaaggcag ccctatctgc tcctgtttgg gcatgtttca    10080
```

```
aagcactttc cgccagggca ggggcaccgg gacctctccg tgtgcccacc tcccggtgtc  10140

tgcaccacct cctccagcca gccctggctg tggctgatcc ccaccttcct ggcactgcct  10200

gccacagctc actcacccccc catggtatcc ctgtgaggca gattccacta ggacccccat  10260

tttcagatga ctatatgagg cccagtcacc cagcacagcc agctcatgct ggagacagga  10320

cccacatcgg actgcctggc tcccaaccac cgtgcagctt ccctgagccc actccctggc  10380

ccagctcaga gcccgaggct tgcatgtttg ttgggatgtg tgacagagaa gcccgagctg  10440

agaaaggcgt ggagaggcac tgacttctcc gtttcctctg ctctatcctg gcagctgatg  10500

ccactgctga agctgcggca cgcccacatc tctgtgtacc aggagctgtt catcacgtgg  10560

aatggggagg tgggtcagag ctgacaccta cgggctcagc cgccacgcag tgggctgcag  10620

gaccaagcag actgagccca gagcacgccc accccccact gtcagaatag ctcgtgtggc  10680

aatggcagtg actgtaaacg tggccacccc tgacctaaca ctcactgggg ccaggtacca  10740

tgctgggggc tttcggtgca tagtctcata ggagccccaa aaacctcatc gtcaggagag  10800

tttttttttt ttttggacaa agtctcgctc ttgtccccca ggctggagtg taatggtgtg  10860

atcttggctc actgcaacct ctgcctcccg ggttcaagag attttcttgc ctcagcctcc  10920

cgagtagcca ggattacagg cgcgtgccat gatgcccggc taattttttgt attttttagta  10980

gagacggggt ttcaccatgt tggctgggct ggtgttgaac tcctgacctt aagtgatccg  11040

cccgcctcgg cctcccaaag tgctgggatt agaggcgtga gccaccacgc ctgaccagga  11100

ggggttctta acccatttga cagaagaaga aacagaggct aacagaaaca agttgctcca  11160

ggttacccag ctagtacgtg gccaagccag agggccaggc cagatgggcc tgactcccgg  11220

gctctgcacg cagccaacga gcttgtcctg gtgagcctgt gcctctgatg acagagtttt  11280

tactttcatg gaaggagcta gttgacctcc gtctccacag ccacccgaca ccggtgccgt  11340

cctgggcctg tgcgcccctt actcctgcag cccctgtgca gcttactgac cagcaccaca  11400

tccgtcatca cgtgccagga gggctgcagg gcaggaagta ctgtccctgt gctcctgatg  11460

gggcctaggg ctccggttca ggagctctcc aaggccacac agctagtaaa cagctgactg  11520

gggacggaga ctcaggtcca gcagccgggt cctgtaggct ggatgacttc ttgtctttac  11580

aaggagccag gagctttcca gtcacttctg atgggactga ggcagacagc gggaggctga  11640

gcaggcacaa ggggtgctgg aggtaaagag aggctgagaa gccttctgcc aggcgccagc  11700

ctgcatgaga tgtccacact ggtgttccca cctggggcca acaatcccgg gtccgagcag  11760

gaaaggcccc tcacacgctc cctctgctcc agcgggtctt ggggaggggga cctcactgca  11820

tgcactccca aagattttct gagcacccccc taatgctctc aaggagggtg cagagaagcc  11880

aagaggacat ttccctatgg gagggagcac agaattgggg gccctgacct ggtctgctgg  11940

ggctctggcc agggcagggt cctcagagga aatgggtctg agctgagccc taaagggtgc  12000

atagttatcc ctatgaaggg ggtgggtagt ggtccaagca gaggggtcca tgtgtgcagt  12060
```

```
ggccaggga caagtgcagc ttttgggaaa gtccaagtag cttggtgtgg atggagtgtg   12120
gagtggaggt ggagcctggg aatggggaga ggagagagag gaagctgaag gtggggcagg   12180
aggggcttgt agcccctcc agtgggcagt gctcccacgg ccactgcaaa tggcagctga   12240
gcgcaggag gccctggagc aggtgagcct gcagaagcac cggggcctgg gcgtcctttg   12300
gctaagggc tcctgtccca gcagatctct tctctgtacc tctgcctggt gatggagttc   12360
aatgagctca gcttccagga ggtcattgag gataagagga aggcaaagaa aatcattgac   12420
tctgaggtga ggtcctttgg ggcaccaggc ctggggggcca cctagacctg tgacacaggc   12480
cctgcggtgc agggcaaagt aacagcggga gggcaggcac catggagtcc agccttgttt   12540
ttttcttaaa tgtgtgcctc gaggcattgc actctaggta atgtgtgcag atcttaagtg   12600
cacagtttga tgcactcaca caacttccac ccagatcaag acagaaggcg ttcctaacac   12660
tagaaggttc ccagtcggtg accatgattc cagattgttc tgccggtccc tgaagttcct   12720
gtaaatggac tcgtccggca tgctgccact cctgtctggt ctccttccct cagcctgctg   12780
ttgtgagccc cgcggtgctg ctgcatgcac cagcaaatca tgtgttcatt gcttgctgcc   12840
actctgctgc ctgattgcgc tgcaggctgt ttacctagtc tcatttgggc tgcttccagt   12900
ttggggctat tgtgaataag gctgctatga gcattgctgg aagacactca cttttctggg   12960
atgaatacct aggagtggaa ttattgggtc gtagagtaca tgtgtgtagc ttcagtggat   13020
gctccaaaca gatttccgac ttggtttggt tggccccatg tttactctca caagttgtga   13080
gcattcccga tccacatgga ggccagcact tcattgtgtc agtcttgttg ttgttgttgt   13140
tgttgagatg gagtctcact ctgtcgccca ggctggagtg cagtggcacg accttggctc   13200
actgcaacct tcgcctcct gttcaagcga ttctcctgcc tcagcctccc aagtagctgg   13260
gactacaggt gcccaccacc acacccacta attttgtat tattaataga gacaaggttt   13320
tgctatgttg cccaggctgg tctcgaactc ctgacctcaa gtgatccacc cgcctcggcc   13380
tcccagagtg ctgggattac agatgtgagc cgccgcgcct agccagttca cttttcttaat   13440
gatgtctttt gatgatggaa agtcctaact gtaatggagt tcgctttccc aatgctgact   13500
cttatggtta gtgcctttgg agtttaagaa gcatttcctg ctccaagatc atgaagatac   13560
tctcctctgt cttatggaag cttggttatt tttgccttca catttagatc tttcatctac   13620
cccagatgaa tgctacctgc ttttaccctg agaactgtgt ttgggggggac catgtacccc   13680
tgaggggctc ttcggggcac acagctcttc tcttaccatg ggcctcagag gcaggcccgg   13740
agtgagtttc agactttgtg agtgaagccc ttcaaaacac gaaatattcc cagaaaccca   13800
gtaagtgcag cagacctact ctaactgggg gcagtgggag gacgcccaca tcctgccccc   13860
tcagccctc tctgacaccc cagggtggcc ctgaatccag gggccctagg agcccagctt   13920
tagaatcacc gcgctgggta ctcgatggag cttgtctctg atgcagaaca ctcctagcat   13980
tctctctcag ggctcttttc atttgaatga cctagaggat tgagctcatg taggcactga   14040
aggcttccac ctctccccata ccccgcaaggc cgatctgcct tcagctcccca gcaagtgtgg   14100
```

```
ggcagcgcgg gccacagagt agggtgcagg gatggggccc ctgcgcacc  cagggtctct  14160
ggtatggaga cagcagtgtg gagtctggaa actcagagtc cttctggctg ccgccgcggc  14220
tttaccatct ggagagccac cacgctgaag cctcctccac cctgagcgct tggctggctt  14280
caggcctgtc tcaagatgca aggagaggat acaccaccat cctgctggct gctctgagtg  14340
tcacccccct gaaagcagca cagggtgccc ctcccatcct ggcacccccct acttctcccc  14400
cagtggatgc agaatgtgct gggccaggtg ctggacgcgc tggaatacct gcaccatttg  14460
gacatcatcc acaggtaagt ggggcccctg acctctgcgg actggctggc tgcttcggga  14520
gaaaaggcac tgaggccact cgggtgccag tgcccgtggg caggatctgg ggagaaaggt  14580
gcaccgggcc agtgcagcca ggataggatg ggaccttaca gagctcctcc cgggcttgaa  14640
agaggctctt ccaagtggtc tcaagccatg tgcacacgca cagctgcatg gggtgtgcgc  14700
tagccaggcg ggctgctcta gagttcgtgg aaaggaagga ggcaaaagcc ctgccaagaa  14760
gagagaccgg gttgcctgcc gtggggccag tgtgggctga gtgggccctg ctgagccttt  14820
gaccccccagc ggcacaactt tcaggctgga gaatccatgg tctgaagggg ctgggagatg  14880
gctccaattc tgaacaccaa tatcttattt aaagaggaag agggaaacta tgcagctggg  14940
cgtggtggtg cacgcctgtg gtcctagcaa catggaggct gagatgggag gattgcttga  15000
agccaggagc ttgaggctgc agtgagctat gatcgtgcca ctgcacttca gcctggccaa  15060
ccctgactta aaacacacac acacacacac acacacacac acacacacac acacaccacca  15120
cgcagaccat acgtacaaag ggaatgctca cattccacat ccagtgttca tgtcactaga  15180
cgtcgcacaa tggccaaaaa tcaatcccca ggcaaacgtg tagctgagat atctaaggag  15240
gtgaatgtgt caattaaggg gcctcttcgg agtgctgggt gtgttcctac ttgtggttga  15300
ggatttttcc cccgatttaa aataattgag tatatttctg tacataggaa acaactgctt  15360
aaaaagtagg ctgagatggg gcattttgtg gaggagagga ggatgtgggc tgctgctgca  15420
gaaccaggtg gggcagggag cagagagtca ggctcagcac acacactggt cccacctggg  15480
gttgtgggtg gtggctgccc aggtggcccc ttggcatcca gaggcaaacc cacctcttgg  15540
tttcaggaat ctcaaaccct ccaacatcat cctcatcagc agtgaccact gcaaactgca  15600
ggacctgagt tccaatgtgc taatgacaga caaagccaaa tggaatattc gtgcggagga  15660
aggtggcagg ggctccccca ggttgtggga gaggggttg gcgcctagaa tccaggcggc  15720
gttggccact ctgggtgctg gagtgaggca acatcaaaca gctgtttgct cagaaggtcc  15780
ccacaaagcc ctggccttgt gtaaactcca aagagacctc ctttgggttg caactgagca  15840
ggcgtgccac caccagggca gaggcagggc cccacagaca cccaacattt gagagaaaca  15900
aagtcgtggt tgtttgtggt accccagaaa atgttgcctc tcatggaggg aaaagaaagt  15960
gtcagaagga aggatatgaa aatgcccagg acggaggag gtgggggggg tcagcccccc  16020
gcccggccag ccgccccgtc cgggagggag gtgggggggct cagcccccccc gcccagacag  16080
```

```
ccgccctgtc cgggagggag gtgggggggt cagcccccg cccggccagc cgccccgtca  16140

gggagggagg tgaggggcgc ctctgcccgg ccgcccctac tgggaagtga ggagcccctc  16200

tgcccggccg ccaccccgtc tgggaggtgt gcccagcagc tcattgagaa cgggccatga  16260

tggcaatggc ggttttgtgg aatagaaaag ggggaaaggt ggggaaaaga ttgagaaatc  16320

ggatggttgc tgtgtctgtg tagaaagaag tagacatggg agacttttca ttttgttctg  16380

tactaagaaa aattcttctg ccttgggatc ctgttgatct atgaccttac ccccaaccct  16440

gtgctctctg aaacatgtgc tgtgtccact cagggttaaa tggattaggg cggtgcaaga  16500

tgtgctttgt ttaacagatg cttgaaggca gcatgctcgt taagagtcat caccactccc  16560

taatctcaag tacccaggga cacaaacact ctgcctagga aaaccagaga cctttgttca  16620

cttgtttatc tgctgacctt ccctctacta ttgtcctatg accctgccaa atccccctct  16680

gcgagaaaca cccaagaatg atcaattaaa aaaaaaaaaa agaaagaaaa tgcccaggac  16740

ggagggtctg tgggtgccag gcactggctg cgtgtacatc actgagtcct acaacaaccc  16800

aggagatgaa ggggtggggtg gcaaggggag acgagttctc gttcctttga aaagatggcc  16860

agagaaaggg ggctggagag atcaaccaca gaggaggagt ccagagtccc aggatggcag  16920

ttgctggttg cactctgtcc tttttttttt tttttttttt gaggcggagt ctcgctctgt  16980

cgcccaggct ggaatgcagt agcgcaatct cggctcactg caagtccgc ctaccgggtt  17040

cacgccattc tcctgcctca gcctcccgag tagctgggac tacaggcgcc tgccactggg  17100

cccagctaat tttttgtatt ttttttagta gagaccgggt ttcaccatgg tctcgatctc  17160

ctgacctcat gatctgccca ccttggcctc ccaaagtgct gggattacag gcgtgaacca  17220

ccgcacccgg ccacactcag tccttggtag acagaagatg aatgagtaga tgggtgggtg  17280

tgtgggtttgg tgggtggtag gatggatagg tgggtgggta agtggatgga tgatgggtgg  17340

gtgagtggat ggatggatag gtgggtggat agatggatga taggtgggt gggtgggtga  17400

gtggatggat ggatggatga gtggatggat gaatggatga atggatgagt ggatggatgg  17460

atggatgggt ggatggatgg atggatggat gtgggtgagt ggatgggtga gtaggtgagt  17520

gtgggtgagt ggatggggtgg gtggtgagt ggatgggtga gtaggtgagt ggatgagtgg  17580

atggatggat gagtggatgg atggatggat ggatggatgg agatggatgc atgcatgcat  17640

ggttggccgg atggatgaat gggagggtag gtaagtggat gggtgggcgg gtggatggat  17700

aggtgggtgg gtcagtggat ggatagatgg gtgggtgagt ggatggatag gtgggtgggt  17760

gggtgggtca gtggatatat ggatggatag atgggtaggt gagtagatgg atggatgggt  17820

gtgtggttag agggatgggt gtgtgggtgg atgggtgagt gcatgggttg tggatggatg  17880

gttgggtggg tagatggatg ggtgggtggg tgcatggtgga tggatgtgtg ggtgggtagg  17940

tgtatggatg aatggatgca tgggtgagtg tgtgggtaga tgggtgggta tgtggatgga  18000

tgggtgggtg agtgagtgaa tgggtgagtg agtgaatgag tgtgtaggtg ggtgagtgga  18060

tgggtgggtg ggtggatgga tggatggatg tggatgggtgt gcgtggatgg atgggtggac  18120
```

```
agacgggcag atggttggtt ctattggagg tgtagatggc atgcgtcctt ggagtccagc   18180
cctttactgt tgggctgggg aatggaggtc cagagaagga ggggctgcct gaagccaacc   18240
agggactgat ggactcagag gagtctgctc ttttgcctcc ctgtctgggg ttccagttga   18300
gaaagtaggg cagagcaact gtaactttgc ccccaaggtc ctgacattta gaaggggcaa   18360
gaagtttaga ggggtgcaca gtttcttggc acgtgcctct tccaactcct tctacagcca   18420
tccaggggcac acagacacac cacctatatg ggccagcctg gtgggcaccc accaagatgg   18480
acagcttcag tggctccaga tcaacacaaa gctcccgctg attggggcct cttcctcccc   18540
acagttaata ttctccacct cttctgagaa gaggacctgc agggcttgtg tttcaagctg   18600
cttgcggggg gccaccaaag gggatacagt gctgggcagg gtgactctgt caagcccctg   18660
cccccaggga gcaaaggact cagggatccc accttgcttt taccaacaga cccctttcgt   18720
aagtcctgga tggcccctga agccctcaac ttctccttca gccagaaatc agacatctgg   18780
tccctgggct gcatcattct ggacatgacc agctgctcct tcatggatgt gagccgccct   18840
ccctccccca caccccacat gctgttcccc acgcgcccag gctgggggaa aaggcttggc   18900
ctcaccctgc ctcccctctg catcccttcc cctggctctc tgcaggctgc acagagccct   18960
cttctcacc tgcgaggggc ctgccctcct cagaaccct cagcttgcag cacctgctgg   19020
gctctagcag gataatgaca gcagtggtaa tattcagacc atcccacgcg accctgcag   19080
cagccctcca ggtggtgtca ctgactcttg atggagaaaa gccaagttca ggtgcccttg   19140
tgagcatgaa ggctgcacgg agttgcaagc aacgggaacc cagtgtgggc ctgaacacac   19200
ctggctgtct catgcacaag ccccaggctg gtgtggaggt gccttctctc ctcctgcaca   19260
tcccttagcat gcagctcttt ctctcatccc tgctgggggcc cctgcaccat ggccacagcc   19320
tgtgggcagg aaggagggga ggcagagggc cccactggcc ccgcgagcac tccaaggtca   19380
ctctggctgc agggaggcag ggaagtccag cctgtcgctt cctatcctct atatgcagaa   19440
gagaaaagtg gggaaggcct gccatgccca aaacaaggaa gctcccccttc tccgcagcac   19500
cacctgcagg caccgaggtc cccagaaagg acagacacct ggctggaccc aggttcccca   19560
tggtctccca gacccccaga ctccacctct gagaagcacc ttgccactcc cttcctttga   19620
aagactccca gggaaatgag agccttccca cttcggaggc tgtgtgtgacat cctggaaatt   19680
agcctgagct ccagccccag cccaggcagt gtgaccctgg gcatgctcac actctgtgaa   19740
atgggcatgc tgtctttactg gctgggtcta gatcaggggg ctttcttggc aggactccac   19800
cccgggagac aacccgctgg cttctctgaa actccatttc ttcttatgga agagcttggg   19860
gcccctgggg tctctgggca tcttgtagaa cggtggccac acctggctct ccctggtctc   19920
ctcctggatt tcttggtccc tggtcgtccc ctgcccatgc tgggacctag ttttcattta   19980
cttaaggggaa tacacagagc tgtcctctct ccgtgcaggg cacagaagcc atgcatctgc   20040
ggaagtccct ccgccagagc ccaggcagcc tgaaggccgt cctgaagaca atggaggaga   20100
```

```
agcagatccc ggatgtggaa accttcagga atcttctgcc cttgatgctc cagatcgacc  20160

cctcggatcg aataacgata aagtgagctc agggtcgggg tttattttaa cctgtggatt  20220

tatctttcaa catctctcca ccctaataca agcacagcta gttggctttg taacgcctca  20280

aagaactcca tcacagatgc cctgattatc cctgcacagc tgggctttgc ccagttctgg  20340

ctctcccaaa ccgtgctgcg gcgagtaatc ccgaatgtac ggtggagtga gcagactgac  20400

ccccaggagg cacaggaggc gtagccccca ggacccacga cactttagg gttccagaaa  20460

aaagttttca ttctacataa aaaaaaaaat tcctaaagac aatggtcacc tttaaatttt  20520

tcattctaac ttactttaaa atcagaagac aaaagtaaat acataacagt ggccggggcg  20580

gtggctcatg cctataatcc cagcactttg gggggctgag gcgggtagat cacttgagct  20640

caggagttct agtctagcct gggtaacatg gcgaaacccc tgtctctacg aaaaatacaa  20700

aaaattagct gggtgtagtg gtgcatgcct gtgttcccag ctactgggga ggctgaggca  20760

ggaggatcgc tcgagcccgg gaggcagagg ttgttgcagt gagctgagat ctcgccactg  20820

cacttcagcc tgggtgacag agtgagaccc tgtctcaaaa acaaaacaaa aacatataac  20880

aaagaatcca ggccggacac ggtggttcac acctgtaatc ccagcagttt gggaggctga  20940

ggtgggtgga tcacttgaag tcaggtgttc gagaccagcc tggccaacag agcgaaaccc  21000

cgtctctact aaaaatagaa aaaaaattag ctgggcatgg tggggtgcgc ctgtagtccc  21060

agctactcag gaggctgaga cagaagaaat gctggaaccc gggaggtgga ggttgcagtg  21120

agccgagatt gtgccactgc actccagcct aggtgacaag agtgaaactc catctaaaaa  21180

aaaacccaaa caaaacaaaa caaaaaaccc aacatatagc aaggaatcca gcctgggtca  21240

tattcatctt tataccaacg cagttgtaaa atctgggttt tcatgtttct atggaggcag  21300

gggacaagag caaaagtgcc agggccccgg actgtccccc agctctgtga gctgaggccc  21360

tgcctccatg gagtacgtcc ctgggtgtgg aattgctggg gtgcttgccg gacacactgg  21420

ggacactatg agagaccctg ccaaatgaat cccaaaacag ggagttcagt gtccagtgtc  21480

cgcaccaatg ggcagcccgg agccagaggc agagggagag ccccacgggg aggtggcagg  21540

gggcgctgct gggttactca gccctctctg ctcctctgct agggacgtgg tgcacatcac  21600

cttcttgaga ggctccttca agtcctcgtg cgtctctctg accctgcacc ggcagatggt  21660

gcctgcgtcc atcaccgaca tgctgttaga aggcaacgtg gccagcattt taggtgatgc  21720

tggggacaca aaggggggagc gtgccctgaa gctcctgtcc atggccttgg catcctattg  21780

tttagttcca gagggttcat tatttatgcc cctggccttg ctccacatgc acgaccagtg  21840

ggtaggaaca gtttccctcc atccatccct acacactgcc caggacaccg ctctgctcaa  21900

atatcctcca tagctcccaa ctacctataa cacaaagttc ctctccatag cctggcccccc  21960

acctgttttc cctccgctcc tgctacacaa atcctctatg tagctcaatg gcctagtcac  22020

tgcccacgcc tcccacaacc ctctgctttt gcttccacag cctgggtggc acacagtggt  22080

cccaggacat cttcctcaca cagcagccact tccttcctgc gtgcttctat gtgcccagga  22140
```

```
tgagcagaag tgcgctccat catctgtgtg ctccaagaca gagacttggg ttctattaag  22200

gaaaagttgc ttggtctcag tggcctcatc tgtaaagtgg ggatggtaac agcccctccc  22260

tctcatcctg aacctgtgga tctgaggagg ggatgcacac acagcagcca gcccagtgtg  22320

gtgccgagaa acagagcccc gaggccctgg tcctcagaaa ggtccctccc ctgccttcct  22380

gtccctgcag aggtcatgca gaaattctct ggctggcccg aagtccagct cagggccatg  22440

aagaggcttc tgaaaatgcc tgcagatcag ctaggtaggc cccaccctgc accccttttcc  22500

cagctgctcc cctaggggca gaagctatgg tccggcctgt ggggagctga ggctggccct  22560

caccccgggc tctcctcgcc agtgctttat tgcagcgtgg aggcgtgcat gtgtccccag  22620

aagagtcccg tgtctctgct atctgcctgg ggaagacagc agagaagggg aatgggtggt  22680

gtggcagccc tcacatgatt ttaatggagc cacagacatc ccatcttccc cactgtccct  22740

atgaggggta tctgagttgt ttctcagttt ccactattat gaatgatact agaacggaca  22800

ccctggtgtg tatgtatctg tgcacttgtt tccgtagcac agattcctag atgttcaaga  22860

gtgtgaatac tttaactttt cacagataca acttgcccac ctattaagaa tgcatggcct  22920

ggcgcagtag ctcacgcctg taatcctagc accttgagaa gccaggcgg gaggactgct  22980

tgagcccagg gatttgagac cagcctgggc aacaaaggga gagcccattt ctacaaaaaa  23040

taaaaaaatt agccaggtgt ggtgacacat gtctgttatc ctagctactc aggaggctga  23100

ggcaggagga ttgcttgagc ccagggaatt gaggctatag tgagctacgc ttgcaccacc  23160

gcactccagc ctagaagacc ctgtctcaga aaacaaaacc aaacccaaaa agattgttac  23220

tgctcattca tggagagtgt tgggaaaagc agtttttttt tttgtttttg tttgtttgtt  23280

tgtttgtttt tgagacaggg tctcgctctg tcccccaggc tggagtgcag tggtgcgatc  23340

ttggctcact gcaacctccg cctcctgggt tcaagtgatt ctcctgcttc agcctcccaa  23400

gtagctggga ctacaggtgt gtgccaccac acccagctaa tttttcgtat ttttattaga  23460

gagggggttt caccatgttg gccaggctgg tctcaaacgc ctgatctcaa gtgatctgcc  23520

tgtcttggct ttccaaagtg ttgggattac aggcgtgaga caccgtgctc ggccaatttt  23580

taaaacattt gtgccaaaac atgctttcat aaaatctttc cattcaacct ttttcacctg  23640

cctgaacatt accttcacat atccatccat ccacccatcc acccatccat ccgtctgtct  23700

atccatcaga cctggattag gaatccactg aggtttgttg cagtggctcg ggcctcagag  23760

gtgacaaggc ccagccctgg cctttgagta ggtagcagag gcctcatatg ggcctaattt  23820

accattccct ccctccccctc ctcctcttcg accccttttg tagctcagct gtgaccagga  23880

cagagtccct gggaagagag actttgcctc cctggggaaa ctagggaagc tgttgggccc  23940

catcccaaag ggtaggtctt tcccaccacc cggagccaca cctccctcca cgccttgctt  24000

agaaatgggc ttgcagccca gcgcagtggc tcatgctgt aatcccagca ctttgggagg  24060

ggctgaggtg ggcagatcac ttgagatcag gagttcaaga ccagcctggc cagacatggt  24120
```

```
gaaaccctgt ctctactaaa aatacaaaaa ttagccagac gtggtggcgc atgcctgtaa   24180
tctcagctac gcaggaggct gaggcaggag aatcgcttga acccaggagg cggaggttgc   24240
agtgagctga gatgatgcca ctgcacaacg gcctaggcga cagagtgaga ctctgtttca   24300
aaaaaaaaaa aaaagagggg ggggtcttgc ttcgctccac actccaggtg ccaggacttc   24360
atccttgttg ctctcatgag cctagagtgg agggatggct gcctggccac tgcccctcac   24420
ccagtcccca gcccacaaca gtttctggca cagtggcagg gtggatggag cccacccacc   24480
catgtccacc ctcagggcag ttgcagccaa gggctctgga atagactggc taggttcaaa   24540
ctgctgaaga gcaggtgctt tcatcctgct gaccccaggt tcctcatctg catatggagg   24600
gcagccttgg gaggggccac ttcacagggc tgtgggcagc acagagcagg acacccgtgg   24660
cagacatggc atgcactcca tggacctagc gctaatcctc attgtccttc ccccttctat   24720
tcacccacct agggccctgc aggctcctac cagcctctgg gggccctggt cgggtctata   24780
tgcccccgat ctggcccaaa atgagtctcc cctgtgccgc ccgccctgcc aggtctgccg   24840
tggccccgg agctggtgga ggtggtggtc acgaccatgg agctacatga cagggtcctc   24900
gatgtccagc tgtgtgcctg ctccctgctg ctgcacctcc tgggccaagg tgggtgccaa   24960
accagccag atggggtcgg ggaggctgtg cgctgcttcc tgcagctgtg cctcctgggc   25020
caaggtgggc accgggccgg gtgggttagg ggaagccatg ccctgctccc tgctgctgca   25080
ccttctaggc catcttctag gccaagtgg atgccagggc caggccagga gacactcctg   25140
gtggcctagc tctgcccccca ccacctggtt ggcatctaac cactggagag tccatgccat   25200
cctgtgccca tcagacccca tcctggatgg cagagagggc acaggccagg agcttggaga   25260
cgcggatccc acccaggcct gccttttgcc tgctccgtgg ccctggacaa gttcctgatg   25320
atcctgccag ttttcccagc tatgaagcga ggagctggac acgaggtcct ctggagtgac .  25380
cctcaggag gatgggttgt gtcctctgaa gagggctggt aggagggcag tgctgagttc   25440
atttcactgt cctgatggaa gaggttggag ctgagagatt gagcctccta tgagagacat   25500
gggttgttaa aagagttgaa ttagctttga tgattttttt tgaaacaaaa agtatttagt   25560
tactttttt ttttttttg agatggagtt ttgctcgtca cccaggcgag tgcagtggcg   25620
cactctcggc tcaatgcaac ctccacctcc caggttcaag cgattctcct gcctcagcct   25680
cctgaatagc tgggactaca ggcacccacc accacgcctg gctaattttt gtatttttag   25740
tagagacggg tttcaccatg ttagtcaggc tggtcttgaa ctcctgacat cgtgatccac   25800
ccgcctcagc ctcccaaagt gctgggatta taggcatgag ccaccgcgcg cggccacctt   25860
tctagtttca ctgttggaag tttggagttc catgcaatgt tgaaattgtg ttcagtgctg   25920
cctgactggc tcccagggac caggatgcgt ggcctggccg ggcagggctc ccttccggtc   25980
cttcactcca ttaggccaca gggattcatg gaggcctgct ctgggtcaga acaaggcaga   26040
cctcggtttc cttcatgcaa agtggagatg ctatccccca gcctgtgagc cttgtgtgtc   26100
tggccccatg cctgagctgt ggggctaacc ccaggcgtct tcctctggct tgagcagcgc   26160
```

```
tggtgcacca cccggaagcc aaggctcct gcaaccaagc catcacctcc accctgctga  26220
gtgctcttca gagccacccc gaggaggagc cacttcttgt catggtctac agcctgctag  26280
ccatcaccac aacccaggt gtgtctgcca gccacctcct gccccaccca cgctccagga  26340
cagcccttcc caggggtctt ggaagggttg gtttggggta taggtgggtt ggacaggaca  26400
gtgctgggcc tcctcctgag atacatggtg gcatttggcc gtcttcattt ggccaccca  26460
aatgctggtc gcatccttt ccatcttgat gacaagcttc cactcttgaa gtcactggtt  26520
ccctctacag acatgctagg cgcagctgtg ggcttcacac caatgacatc tcttttccac  26580
acttcctgcc ccttctggga ggctggggct caaatgccct gtgtgtctcc attccatagg  26640
gcccagtggg cttccgaagc cgccagccag gactgtggga aggagagggc catacagagc  26700
gctcacacct tcacccacaa atcgggtggg cactgttctc cccaacagga agctgggcct  26760
cgagagagcc taaggacagt tgccaggagt ccatgcagca gggttcaggg ctggggtctg  26820
ggccccagca ccctctttac tgcacagact ggataactga tgatacatgg ctgatctcac  26880
tttggggagt gaaaggaggc actaggaata gatgtcaact ggaaccctca ggcaaaatgg  26940
atgtcagttc atcctaccgg gatagggccc cgtcatggtt ccatcctgga aggcacaggc  27000
tggctctgtg agcccaggag gcagggtcag gcccctgga tgggaagcta cagaggtcag  27060
acccagcctg gtagtgggat ggcagctatt gggactggtg gcccacgaga tggacagact  27120
cctctggggc cagtcccaca tcctcctgtt cagggctcca ttgagtgcac acgacttggc  27180
ccagagcagg cacctaggat tgcaggtcaa atgggactgc agtgcccaag gacaacagag  27240
gcaggaaggc ttcctggagg gaggggcct ggggccctca ttctggctca cccacagagt  27300
cagagtcact gtcagaggag ctgcagaacg ctgggctgct ggagcacatc ctggagcacc  27360
tcaacagctc cctcaaaagc agggacgtct gcgccagcgg cctgggcctg ctctgggccc  27420
tcctgctgga cggtgagggg ccctcctcct gctgtccac cggggctggc agcctcccc  27480
cagccctcc ctaactgccc ctgagagcct tcgaggacct ccatgtcctg tccctaaaac  27540
acaacagcca tagtccggga aaggctcttc tgagagcttc caactccaac agaagaaat  27600
caaggacag agagagaaaa ggcaggggag aaaggccttc tggcagaggc cgggtttcag  27660
gacttcttgc ccagtgggca gaccctcag ttttaagtgc ctcctgccca gggaaatgtc  27720
ctgggatttt ccgggcagtc ctggttccag agggcagcgg tggtgctgga tgccctgttt  27780
gttttgattt ttgattcaca gtaggggcc ccctggcctg tgctgcttcc tctcctctag  27840
accccatctt ggcactccag cgccccagga aaaagagagc tccaaaccac ggaaagcccg  27900
ggaaacccaa gaaccctgcc agcacccaaa gtgtgggatt ctccaagcct ctcctgggct  27960
aacccctgca cccgtctctg aggacagttg acctttccca ccccatttct gctgttgtcg  28020
ttagctggaa gaaggcagca gatgggggat gggaaggccc cctgcacac acccaaggcc  28080
tgggtgtccc cttccatccc tgtcctcgtt ccaggtatca ttgtgaacaa ggcccccttg  28140
```

```
gagaaggtcc cggacctcat cagccaggtg ttggccacct accctgcgga tggggaaatg    28200

gcggaagcca gctgcggagt cttctggctg ctgtccctgc tgggtgagct ggatgggcgc    28260

cctgggcccc tggggctggg aggggtgggc ctcatggcac agcaggcaca aggcagcccg    28320

gcccctttct gcaggctgca tcaaggagca gcagtttgaa caagtggtgg cgctgctcct    28380

gcaaagcatc cggctgtgcc aggacagagc cctgctggtg aacaatgcct accggggact    28440

ggccagcctg gtgaaggtgt caggtgagcc tggggacagg acgaggctgc cacctagagg    28500

tggggcaag aatcagcccc catcagttac atctgccagg tgccacaaac caaaaaacag    28560

aagcaacaaa tcaaaaagga aaagaaatta aaaacgatct gaagtccagt catccagaaa    28620

tcaccatcaa gactttcacg cacacttgat aaactcttgt ctctgcgtta tgctaccctg    28680

tgaccctctc tctgtccata aacacatcac atctgcacag gtttcctaac atgcaggcac    28740

accgtgactg atcaaaacag ctctgcaaac agtgtctcca attccccaca acacaaaccc    28800

tgcctgttac tcagctagac aggctgggcc cagcgctgag cacagcacaa ccgacgctcg    28860

gcccacagca cagtccttca gagagcatcc tgggcctggc caagacacta gctggtgcct    28920

ggcaactccg ggctcatggt cttgacctct gtactaccta atcttcccca gagtgacaac    28980

gacccctttg gctctggggg ggctgcctcc tctgttcttg catggtcctg ttcaggtcat    29040

gccagcctac tggtccgccc aagctgatgg ggctcctgg gtcccgtctc ttgtcctgtc    29100

ccaggcccct gtgtgagctc tggggtccca tcccgtcctg ggcagaaggc tcttcccttt    29160

caggggaaag caggaatga acccactccc acccatcccc cagagctggc ggccttcaag    29220

gtggtggtgc aggaggaggg cggcagtggc ctcagcctca tcaaggagac ctaccagctc    29280

cacagggacg acccggaggt ggtggagaac gtgggcatgc tgctggtcca cctggcttcc    29340

tatggtgaga acccccttctc acctcacact ccctagagcc cagcggtcag gggtgccccg    29400

ctcccccctat aactgacagg gaaggagcac atggaaggtg ggctcaaccc cacttctcgg    29460

cccacttaaa cttcccactc atttggcatc ttctgagcac caggggttgt cctggctgag    29520

ggtgacgctt ggggctccgg aactgcaagg tggctctgtg catgccaagc ccaaggggga    29580

atgtgaccca ctctcatcct tctgggcctt ctggcaaggg gcacaggaag gactctggcc    29640

tcaggacctt cctgctccac ctgcagagga gatcctgccg gagctggtgt ccagtagtat    29700

gaaggccctg ctccaggaga tcaaggagcg cttcacctcc agcctggtga gtgacagcag    29760

cgccttcagc aaaccaggcc tccctccagg tggaagcccc cagctggggt gcaccacgtc    29820
                                                                    29836
tggggggactg gaatag
```

```
<210>  4
<211>  2553
<212>  DNA
<213>  Homo sapiens

<400>  4
gttttgtacc agctgaatcc tgggggccttg ggggtgaacc tggtggtgga ggaaatggaa    60
```

accaaagtca agcatgtgat aaagcagctc ttcccatgtt ggagaagctt cctgatgcgg   120

cagctggatt cctcgctgct gacacttgcg gagactaatc tggttggggt agatgtgggg   180

gtggaatgca tggatgacca ttacgccagt caggccctgg aggagctgat gccactgctg   240

aagctgcggc acgcccacat ctctgtgtac caggagctgt tcatcacgtg gaatggggag   300

atctcttctc tgtacctctg cctggtgatg gagttcaatg agctcagctt ccaggaggtc   360

attgaggata agaggaaggc aaagaaaatc attgactctg agtggatgca gaatgtgctg   420

ggccaggtgc tggacgcgct ggaatacctg caccatttgg acatcatcca caggaatctc   480

aaacccctcca acatcatcct catcagcagt gaccactgca aactgcagga cctgagttcc   540

aatgtgctaa tgacagacaa agccaaatgg aatattcgtg cggaggaagg gcagaggcag   600

ggccccacag acacccaaca tttgagagaa acaaagtcgt ggttgtttgt ggtaccccag   660

aaaatgttgc ctctcatgga gggaaaagaa agtgtcagaa ggaaggatat gaaaatgccc   720

aggacggagg gagacccctt tcgtaagtcc tggatggccc ctgaagccct caacttctcc   780

ttcagccaga aatcagacat ctggtccctg ggctgcatca ttctggacat gaccagctgc   840

tccttcatgg atggcacaga agccatgcat ctgcggaagt ccctccgcca gagcccaggc   900

agcctgaagg ccgtcctgaa gacaatggag gagaagcaga tcccggatgt ggaaaccttc   960

aggaatcttc tgccccttgat gctccagatc gaccccctcgg atcgaataac gataaaggac   1020

gtggtgcaca tcaccttctt gagaggctcc ttcaagtcct cgtgcgtctc tctgaccctg   1080

caccggcaga tggtgcctgc gtccatcacc gacatgctgt tagaaggcaa cgtggccagc   1140

attttaggtg atgctgggga cacaaagggg gagcgtgccc tgaagctcct gtccatggcc   1200

ttggcatcct attgtttagt tccagagggt tcattattta tgcccctggc cttgctccac   1260

atgcacgacc agtggctcag ctgtgaccag gacagagtcc ctgggaagag agactttgcc   1320

tccctgggga aactagggaa gctgttgggc cccatcccaa agggtctgcc gtggcccccg   1380

gagctggtgg aggtggtggt cacgaccatg gagctacatg acagggtcct cgatgtccag   1440

ctgtgtgcct gctccctgct gctgcacctc ctgggccaag gcctgccttt tgcctgctcc   1500

gtggccctgg acaagttcct gatgatcctg ccagtttctc cagctatgaa gcgaggagct   1560

ggacacgagg tcctctggag tcaccctcag ggaggatggg ttgtgtcctc tgaagagggc   1620

tgcgctggtg caccacccgg aagccaaggc tccctgcaac caagccatca cctccaccct   1680

gctgagtgct cttcagagcc accccgagga ggagccactt cttgtcatgg tctacagcct   1740

gctagccatc accacaaccc agggcgcccag tgggcttccg aagccgccag ccaggactgt   1800

gggaaggaga gggccatact gagcgctcac accttcaccc acaaatcgga gtcagagtca   1860

ctgtcagagg agctgcagaa cgctgggctg ctggagcaca tcctggagca cctcaacagc   1920

tccctcaaaa gcagggacgt ctgcgccagc ggcctgggcc tgctctgggc cctcctgctg   1980

gacgacccca tcttggcact ccagcgcccc aggaaaaaga gagctccaaa ccacggaaag   2040

cccgggaaac ccaagaaccc tgccagcacc caaagtatca ttgtgaacaa ggcccccttg   2100

```
gagaaggtcc cggacctcat cagccaggtg ttggccacct accctgcgga tggggaaatg    2160

gcagaagcca gctgcggagt cttctggctg ctgtccctgc tgggctgcat caaggagcag    2220

cagtttgaac aagtggtggc gctgctcctg caaagcatcc ggctgtgcca ggacagagcc    2280

ctgctggtga acaatgccta ccggggactg gccagcctgg tgaaggtgtc agagctggcg    2340

gccttcaagg tggtggtgca ggaggagggc ggcagtggcc tcagcctcat caaggagacc    2400

taccagctcc acaggggacga cccggagggtg gtggagaacg tgggcatgct gctggtccac    2460

ctggcttcct atgaggagat cctgccggag ctggtgtcca gtagtatgaa ggccctgctc    2520

                                                                      2553
caggagatca aggagcgctt cacctccagc ctg
```

```
<210>  5
<211>  2115
<212>  DNA
<213>  Homo sapiens
```

```
<400>  5
gaggtggtgg ctgtgcagat gatggtggaa tgcatggatg accattacgc cagtcaggcc     60

ctggaggagc tgatgccact gctgaagctg cggcacgccc acatctctgt gtaccaggag    120

ctgttcatca cgtggaatgg ggagatctct tctctgtacc tctgcctggt gatggagttc    180

aatgagctca gcttccagga ggtcattgga gataagagga aggcaaagaa aatcattgac    240

tctgagtgga tgcagaatgt gctgggccag gtgctggacg cgctggaata cctgcaccat    300

ttggacatca tccacaggaa tctcaaaccc tccaacatca tcctcatcag cagtgaccac    360

tgcaaactgc aggacctgag ttccaatgtg ctaatgacag acaaagccaa atggaatatt    420

cgtgcggagg aagacccctt tcgtaagtcc tggatggccc ctgaagccct caacttctcc    480

ttcagccaga aatcagacat ctggtccctg ggctgcatca ttctggacat gaccagctgc    540

tccttcatgg atggcacaga agccatgcat ctgcggaagt ccctccgcca gagcccaggc    600

agcctgaagg ccgtcctgaa gacaatggag gagaagcaga tcccgatgt ggaaaccttc    660

aggaatcttc tgcccttgat gctccagatc gaccccctcgg atcgaataac gataaaggac    720

gtggtgcaca tcaccttctt gagaggctcc ttcaagtcct cgtgcgtctc tctgaccctg    780

caccggcaga tggtgcctgc gtccatcacc gacatgctgt tagaaggcaa cgtggccagc    840

attttaggtg atgctgggga cacaaagggg gagcgtgccc tgaagtcct gtccatggcc    900

ttggcatcct attgtttagt tccagagggt tcattattta tgccctggc cttgctccac    960

atgcacgacc agtggctcag ctgtgaccag gacagagtcc ctgggaagag agactttgcc   1020

tccctgggga aactagggaa gctgtttggc cccatcccaa agggtctgcc gtggccccg   1080

gagctggtgg aggtggtggt cacgaccatg gagctacatg acagggtcct cgatgtccag   1140

ctgtgtgcct gctccctgct gctgcacctc ctgggccaag cgctggtgca ccacccggaa   1200

gccaaggctc cctgcaacca agccatcacc tccaccctgc tgagtgctct tcagagccac   1260

cccgaggagg agccacttct tgtcatggtc tacagcctgc tagccatcac cacaacccag   1320
```

```
gagtcagagt cactgtcaga ggagctgcag aacgctgggc tgctggagca catcctggag   1380

cacctcaaca gctccctcga aagcagggac gtctgcgcca gcggcctggg cctgctctgg   1440

gccctcctgc tggacgaccc catcttggca ctccagcgcc ccaggaaaaa gagagctcca   1500

aaccacgaa agcccgggaa acccaagaac cctgccagca cccaaagtat cattgtgaac   1560

aaggcccct tggagaaggt cccggaacct atcagccagg tgttggccac ctaccctgcg   1620

gatggggaaa tggcagaagc cagctgcgga gtcttctggc tgctgtccct gctgggctgc   1680

atcaaggagc agcagtttga acaagtggtg gcgctgctcc tgcaaagcat ccggctgtgc   1740

caggacagag ccctgctggt gaacaatgcc taccggggac tggccagcct ggtgaaggtg   1800

tcagagctgg cggccttcaa ggtggtggtg caggaggagg gcggcagtgg cctcagcctc   1860

atcaaggaga cctaccagct ccacagggac gacccggagg tggtggagaa cgtgggcatg   1920

ctgctggtcc acctggcttc ctatgaggag atcctgccgg agctggtgtc cagtagtatg   1980

aaggccctgc tccaggagat caaggacgcg ttcacctcca gcctggtgag tgacagcagc   2040

gccttcagca aaccaggcct ccctccaggt ggaagccccc agctggggtg caccacgtct   2100

                                                                     2115

ggggactgg aatag
```

<210> 6
<211> 704
<212> PRT
<213> Homo sapiens

<400> 6

Glu Val Val Ala Val Gln Met Met Val Glu Cys Met Asp Asp His Tyr
1   5   10   15

Ala Ser Gln Ala Leu Glu Glu Leu Met Pro Leu Leu Lys Leu Arg His
                20   25   30

Ala His Ile Ser Val Tyr Gln Glu Leu Phe Ile Thr Trp Asn Gly Glu
            35   40   45

Ile Ser Ser Leu Tyr Leu Cys Leu Val Met Glu Phe Asn Glu Leu Ser
        50   55   60

Phe Gln Glu Val Ile Glu Asp Lys Arg Lys Ala Lys Lys Ile Ile Asp
65   70   75   80

Ser Glu Trp Met Gln Asn Val Leu Gly Gln Val Leu Asp Ala Leu Glu
                85   90   95

Tyr Leu His His Leu Asp Ile Ile His Arg Asn Leu Lys Pro Ser Asn
            100   105   110

Ile Ile Leu Ile Ser Ser Asp His Cys Lys Leu Gln Asp Leu Ser Ser
        115   120   125

Page 23

Asn Val Leu Met Thr Asp Lys Ala Lys Trp Asn Ile Arg Ala Glu Glu
        130   135   140

Asp Pro Phe Arg Lys Ser Trp Met Ala Pro Glu Ala Leu Asn Phe Ser
145   150   155   160

Phe Ser Gln Lys Ser Asp Ile Trp Ser Leu Gly Cys Ile Ile Leu Asp
                165   170   175

Met Thr Ser Cys Ser Phe Met Asp Gly Thr Glu Ala Met His Leu Arg
            180   185   190

Lys Ser Leu Arg Gln Ser Pro Gly Ser Leu Lys Ala Val Leu Lys Thr
        195   200   205

Met Glu Glu Lys Gln Ile Pro Asp Val Glu Thr Phe Arg Asn Leu Leu
    210   215   220

Pro Leu Met Leu Gln Ile Asp Pro Ser Asp Arg Ile Thr Ile Lys Asp
225   230   235   240

Val Val His Ile Thr Phe Leu Arg Gly Ser Phe Lys Ser Ser Cys Val
                245   250   255

Ser Leu Thr Leu His Arg Gln Met Val Pro Ala Ser Ile Thr Asp Met
        260   265   270

Leu Leu Glu Gly Asn Val Ala Ser Ile Leu Gly Asp Ala Gly Asp Thr
        275   280   285

Lys Gly Glu Arg Ala Leu Lys Leu Leu Ser Met Ala Leu Ala Ser Tyr
    290   295   300

Cys Leu Val Pro Glu Gly Ser Leu Phe Met Pro Leu Ala Leu Leu His
305   310   315   320

Met His Asp Gln Trp Leu Ser Cys Asp Gln Asp Arg Val Pro Gly Lys
                325   330   335

Arg Asp Phe Ala Ser Leu Gly Lys Leu Gly Lys Leu Leu Gly Pro Ile
            340   345   350

Pro Lys Gly Leu Pro Trp Pro Glu Leu Val Glu Val Val Val Thr
        355   360   365

Thr Met Glu Leu His Asp Arg Val Leu Asp Val Gln Leu Cys Ala Cys
    370   375   380

Ser Leu Leu Leu His Leu Leu Gly Gln Ala Leu Val His His Pro Glu
                            Page 24

Ala Lys Ala Pro Cys Asn Gln Ala Ile Thr Ser Thr Leu Leu Ser Ala
          405   410   415

Leu Gln Ser His Pro Glu Glu Glu Pro Leu Leu Val Met Val Tyr Ser
          420   425   430

Leu Leu Ala Ile Thr Thr Thr Gln Glu Ser Glu Ser Leu Ser Glu Glu
          435   440   445

Leu Gln Asn Ala Gly Leu Leu Glu His Ile Leu Glu His Leu Asn Ser
    450   455   460

Ser Leu Glu Ser Arg Asp Val Cys Ala Ser Gly Leu Gly Leu Leu Trp
465   470   475   480

Ala Leu Leu Leu Asp Asp Pro Ile Leu Ala Leu Gln Arg Pro Arg Lys
              485   490   495

Lys Arg Ala Pro Asn His Gly Lys Pro Gly Lys Pro Lys Asn Pro Ala
              500   505   510

Ser Thr Gln Ser Ile Ile Val Asn Lys Ala Pro Leu Glu Lys Val Pro
          515   520   525

Asp Leu Ile Ser Gln Val Leu Ala Thr Tyr Pro Ala Asp Gly Glu Met
    530   535   540

Ala Glu Ala Ser Cys Gly Val Phe Trp Leu Leu Ser Leu Leu Gly Cys
545   550   555   560

Ile Lys Glu Gln Gln Phe Glu Gln Val Val Ala Leu Leu Leu Gln Ser
              565   570   575

Ile Arg Leu Cys Gln Asp Arg Ala Leu Leu Val Asn Asn Ala Tyr Arg
          580   585   590

Gly Leu Ala Ser Leu Val Lys Val Ser Glu Leu Ala Ala Phe Lys Val
          595   600   605

Val Val Gln Glu Glu Gly Gly Ser Gly Leu Ser Leu Ile Lys Glu Thr
    610   615   620

Tyr Gln Leu His Arg Asp Asp Pro Glu Val Val Glu Asn Val Gly Met
625   630   635   640

Leu Leu Val His Leu Ala Ser Tyr Glu Glu Ile Leu Pro Glu Leu Val
              645   650   655

```
Ser Ser Ser Met Lys Ala Leu Leu Gln Glu Ile Lys Glu Arg Phe Thr
          660                   665                   670


Ser Ser Leu Val Ser Asp Ser Ser Ala Phe Ser Lys Pro Gly Leu Pro
          675                   680                   685


Pro Gly Gly Ser Pro Gln Leu Gly Cys Thr Thr Ser Gly Gly Leu Glu
          690                   695                   700
```

```
<210>  7
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  7                                                          21
aatggaatat tcgtgcggag g
```

```
<210>  8
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  8                                                          21
uggaauauuc gugcggaggu u
```

```
<210>  9
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  9                                                          21
uuaccuuaua agcacgccuc c
```

```
<210>  10
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  10                                                         21
aatattcgtg cggaggaaga c
```

```
<210>  11
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  11                                                         21
uauucgugcg gaggaagacu u
```

```
<210>  12
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  12                                                         21
uuauaagcac gccuccuucu g
```

```
<210>  13
```

```
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  13                                                          21
aagttcctga tgatcctgcc a


<210>  14
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  14                                                          21
guuccugaug auccugccau u


<210>  15
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  15                                                          21
uucaaggacu acuaggacgg u


<210>  16
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  16                                                          21
catcaccttc ttgagaggct c


<210>  17
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  17                                                          21
ucaccuucuu gagaggcucu u


<210>  18
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  18                                                          21
uuaguggaag aacucuccga g


<210>  19
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  19                                                          21
caagttcctg atgatcctgc c


<210>  20
<211>  21
<212>  RNA
<213>  Homo sapiens
```

<400> 20   21
aguuccugau gauccugccu u

<210> 21
<211> 21
<212> RNA
<213> Homo sapiens

<400> 21   21
uuucaaggac uacuaggacg g

<210> 22
<211> 21
<212> DNA
<213> Homo sapiens

<400> 22   21
gatgaccatt acgccagtca g

<210> 23
<211> 21
<212> RNA
<213> Homo sapiens

<400> 23   21
ugaccauuac gccagucagu u

<210> 24
<211> 21
<212> RNA
<213> Homo sapiens

<400> 24   21
uuacugguaa ugcggucagu c

<210> 25
<211> 21
<212> DNA
<213> Homo sapiens

<400> 25   21
gaatattcgt gcggaggaag a

<210> 26
<211> 21
<212> RNA
<213> Homo sapiens

<400> 26   21
auauucgugc ggaggaagau u

<210> 27
<211> 21
<212> RNA
<213> Homo sapiens

<400> 27   21
uuuauaagca cgccuccuuc u

```
<210>  28
<211>  21
<212>  DNA
<213>  Homo sapiens

<400>  28
gaaggccgtc ctgaagacaa t                                           21


<210>  29
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  29
aggccguccu gaagacaauu u                                           21


<210>  30
<211>  21
<212>  RNA
<213>  Homo sapiens

<400>  30
uuuccggcag gacuucuguu a                                           21
```